

REMARKS

The Office Action states that the amendment filed on March 10, 2003 is objected to under 35 U.S.C. §132 because it introduces new matter, specifically that the limitation of "gel content below 250 ppm" in Claim 33, is not supported by the original disclosure. Applicants respectfully traverse this objection and draw attention to page 8, lines 6- 19, specifically lines 14-16 which discloses that gel contents less than about 250 ppm are desirable. Accordingly, as Applicants have illustrated the amendment filed on March 10, 2003 has support in the original disclosure, Applicants therefore request withdrawal of this ground of rejection.

Applicants have also amended Claims 53, 54 and 56-61 to correct spelling errors.

I. Claims Rejections - 35 U.S.C. § 112

The Office Action rejects Claims 46 and 47 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants have amended Claim 46 to claim "C₃-C₁₈ non-conjugated dienes" and accordingly request withdrawal of this ground of rejection.

II. Rejection under 35 U.S.C. §102(b)/103(a)

Claims 33-40, 44 and 48-54 were rejected under 35 U.S.C. § 102(b) as anticipated by, or in the alternative, under § 103(a) as obvious over Matsuda, et al. (U.S. Patent No. 5,109,082). Applicants respectfully traverse this ground of rejection.

Claim 33 is directed to a process for the production of cis-1,4-polybutadiene having a gel content below 250 ppm, comprising polymerizing 1,3-butadiene in the presence of a catalyst and a polymerization diluent, wherein the polymerization diluent comprises an organic solvent and water particles having a median particle size less than or equal to about 10 µm. Claims 34-40, 44 and 48-54 are dependent upon Claim 33.

Applicants submit that in order to anticipate a claim the prior art reference must teach each and every element of the claimed invention, either expressly or inherently. Also, Applicants respectfully submit that "in order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be

some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claims limitations. The teachings or suggestions to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicants' disclosure." See MPEP § 2142, citing In re Vaeck, 947 F.2d 488, 20 USPQ 2d. 1438 (Fed. Cir. 1991).

Applicants respectfully submit that Matsuda, et al. fails to teach each and every element of the claimed invention and Matsuda, et al. fails to motivate one skilled in the art to arrive at the instant invention. Matsuda, et al. discloses a process for producing cis-1,4-polybutadiene with gelation inhibited. Matsuda, et al. teaches polymerizing 1,3-butadiene in the presence of a halogen containing organoaluminum compound, a transition metal compound and water. As illustrated in the Examples and Table 1, in order to see a decrease in the number of gels Matsuda, et al. requires the presence of a gelation inhibitor. Also, Applicants submit that Matsuda, et al. fails to teach or suggest or even motivate one skilled in the art to arrive at a process preparing a cis-1,4, polybutadiene having a **gel content of less than 250 ppm**.

According to the Office Action, "one would have expected Matsuda's process to meet the gel content limitation of the instant claims" because "Matusda's polymerization process is identical or substantially identical to those of the applicants." See paragraph 6 of the Final Office Action dated April 8, 2003. Applicants respectfully traverse this assertion.

As discussed above and in the previously filed Response and Amendment Matsuda, et al. is also silent to the fact that the polymerization diluent comprises an organic solvent and water particles having a median particle size less than or equal to about 10 µm, Matsuda, et al. merely discloses that water is passed through a 5 micron or less (2 micron) porous filter prior to be dispersed in the inert organic solvent. And as previously submitted by Applicants, the water particles would coalesce in the hydrocarbon and grow bigger than the pore diameter. Further, Matsuda, et al. process requires a gelation inhibitor to see a decrease in the number

of gels. Accordingly despite the Office Action's assertion, the process of the present invention is not identical to or substantially similar to Matsuda, et al.

Further, Applicants submit that Matsuda, et al. discloses the "number of gels" seen by the unaided eye on a piece of filter paper once five grams of cis-polybutadiene was dissolved in 250 ml of xylene. See column 4, lines 30-37. Matsuda, et al. does not disclose the over all gel content of the cis-1,4-polybutadiene. Accordingly, Applicants respectfully request withdrawal of this ground of rejection.

III. Rejection under 35 U.S.C. §103(a)

Claims 39-47, 55-62 and 64 were rejected under 35 U.S.C. § 103(a) as obvious over Matsuda, et al. (U.S. Patent No. 5,109,082) in view of Tsujimoto, et al. (U.S. Patent No. 5,905,125). Applicants respectfully traverse this ground of rejection.

Claims 39-47, 55-62 and 64 are also dependent upon Claim 33.

Applicants submit that Matsuda, et al. in view of Tsujimoto, et al. fails to suggest the present invention. As previously discussed above, Matsuda, et al. does not teach or suggest a process for the production of cis-1,4-polybutadiene wherein the polymerization diluent comprises an organic solvent and water particles having a median particle size less than or equal to about 10 μm and wherein the cis-1,4-polybutadiene has a gel content below 250 ppm.

Applicants submit that the deficiencies of Matsuda, et al. are not overcome by the combination of Matsuda, et al. and Tsujimoto, et al. Tsujimoto, et al. does not teach or suggest a process for the production of cis-1,4-polybutadiene wherein the polymerization diluent comprises an organic solvent and **water particles having a median particle size less than or equal to about 10 μm and wherein the cis-1,4-polybutadiene has a gel content below 250 ppm.**

Tsujimoto, et al. discloses adding water in small amount, but does not teach or suggest that the water particles have a particle size less than or equal to 10 μm . Accordingly, Applicants submit that even if the references were combined, the combination does not teach or suggest each limitation of the present invention. Therefore, Applicants request withdrawal of this ground of rejection.

Respectfully submitted,

By 
Jennifer R. Seng
Attorney for Applicants
Reg. No. 45,851

Bayer Polymers LLC
100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741
PHONE: (412) 777-3879
FACSIMILE PHONE NUMBER:
412-777-3902
s/rmc/jrs/0170